21, Pharmacy database 22, or other databases in various other facility departments. In some cases, the Monitoring Client 1 can upload information it receives from patient monitoring systems 15-17 or from provider inputs to the patient's EHR 19 via the Monitoring Server 3. Monitoring Clients 1,4 may also receive information from databases outside of the facility through a Monitoring Server 3 having an internet connection 25. Various external databases 9 may thus be accessible, including various drug information databases and alert networks dealing with adverse medication-related events. The Monitoring Server 3 could be arranged, for example, to manage various levels of external database information helpful in keeping the Monitoring Client 1 contents as up-to-date as possible. This can be accomplished, for example, by comparing safety and drug information related to the patient as it becomes available, and prioritizing for updates/downloads on a data transfer schedule. The Monitoring Clients 1,4 may also communicate either directly or through the Monitoring Server 3 with portable communications devices 11 used by health care providers such as nurses, physicians and pharmacists. In some cases, these devices can have wired connections to the Monitoring Server 3 (if used, for example, in fixed locations such as hospital pharmacies or nursing stations). In other cases, a portable communications device 11 may communicate with the Monitoring Server 3 through VPN-based internet connections using a computer and a wired or wireless (such as, e.g., Blutooth or WiFi 802.11) connection 13 with the device 11. Alternatively, a hand-held device 11 (such as a wireless smart-phone or tablet netbook) may communicate directly 12 with the facility's Monitoring Client 1 via a cellular telephone network.

[0031] The communications link between the Monitoring Clients 1,4 and the Monitoring Server 3 may exist via a Category-5 wired network if widely available in the facility, or via wireless transmission using one of a number of standards, linking all the patient-specific Monitoring Clients 1,4 with the central Monitoring Server 3. The server 3 may then serve as a relay for communications with other facility servers 8, with web-based servers 25, and with inside and outside portable communications devices 11 carried by medical care providers. A wireless network provides the additional functionality of being able to communicate with the Monitoring Server 3 no matter where in the facility the patient 2 may be.

[0032] One method of blanketing an entire facility with wireless coverage involves having the facility obtain a license for a private cell-phone network. It may obtain or lease one or more micro-cellular frequencies to provide for a local communications network throughout the facility. This arrangement can preserve communications when patients and their Monitoring Clients 1,4 are moved from one location to another within the facility, maintaining communications with a Monitoring Server 3, various in-hospital and out-of-hospital databases 8,25, and users at fixed stations 5,6 or with mobile smart-phone, laptop or tablet-type devices 11 either inside or outside the hospital. An advantage of this type of system is the level of security provided by a licensed cellular communications infrastructure. In addition, an active wireless system can monitor the intensity of use in an area and direct additional channel frequencies to that area as needed. However, the bandwidth capacity of the network may not allow for efficient transmission of large data files, such as those containing radiology images, for example.

[0033] Alternatively or additionally, a hospital may implement an internet or intranet based communications system, in which an 802.11 WiFi-type protocol is used for wireless communications between individual Monitoring Clients 1,4 and the main Monitoring Server 3. To ensure adequate signal reception throughout the facility, a broadband antenna may be mounted on the roof of the building to collect cell phone signals from local wireless phone companies. A fiber-optic or cable network may then distribute the signals throughout the facility. Alternatively, the Monitoring Server 3 may use the private cell-phone network mentioned above. Although this system may not be as secure as a micro-cell system, it may be capable of providing the data throughput to accommodate large files, such as, for example, radiology images stored in the Radiology database 21. Home or office-based users may be able to connect to the hospital server through VPN access using wired or fiber-optic cable, or a DSL phone line. Data encryption may be used to provide needed patient data security. In some applications it may be advantageous to implement an asymmetric bandwidth communications network in order to optimize infrastructure capabilities. An example of this would be using licensed cellular frequencies in the "upstream" direction from the Monitoring Client 1 to the Monitoring Server 3 and the unlicensed 802.11 WiFi frequencies in the "downstream" direction from the Monitoring Server 3 to the Monitoring Client 1. In this example the upstream bandwidth and data rate requirements are relatively small compared to the downstream requirements. In low priority upstream transmissions the Monitoring Client 1 may allow data to be sent over a more distributed and cost-efficient network, such as, for example, a ZigBee network.

[0034] Communications between various monitoring devices and the Monitoring Client 1 may be achieved in a cost effective manner using, for example, a ZigBee wireless mesh network. Exemplary monitoring devices include ECG monitors 14, blood pressure monitors 15, pulse oximeters/capnometers 16, thermometers, and weight scales, among others. A common characteristic of most of these devices is that they provide periodic readouts of a single or small number of parameters. An intra-hospital device communications system such as the wireless mesh network provides for low-power digital radio connectivity among devices, and may employ a widely available, license-free 2.4 GHz frequency band. High-level communications protocols may be employed to ensure data fidelity and security. It is highly scalable, allowing hundreds or thousands of devices to be used on a single self-forming, self-healing mesh network. Devices connected to the network may communicate with one another and serve as repeaters to transfer data efficiently. The advantages of this system are its relatively low cost, scalability and mobility for the patient being monitored. The wireless range for devices linked to the wireless mesh network can approach 70 meters from each node of the system inside a facility. A similar network may be used in providing a wireless link within the facility between portable communications devices 11 carried by health care providers and their assigned patients through the patients' Monitoring Clients 1,4.

[0035] In many cases, the information being transmitted to the Monitoring client 1 may include a single parameter value